44A4

GENERAL ELECTRIC

Instruction Manual

MP MASTER
MA32552

ACOUSTIC COUPLERS - DATA
COMMUNICATIONS
PRODUCTS

INSTRUCTION MANUAL

FOR

ACOUSTIC COUPLERS

MODEL 44A4 18671-001 - ORIGINATE

MODEL 44A4 18671-002 - ORIGINATE/ANSWER

U.L. 478 C.S.A. C22.2 No. 154-1975

March 1976
Serial No. G0001 through 50,000

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The information contained herein does not purport to cover all details or variations in equipment nor to provide for every possible contingency to be met in connection with installation, operation, or maintenance. Should further information be desired or should particular problems arise which are not covered sufficiently for the purchaser's purposes, the matter should be referred to General Electric Company, USA.

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TABLE OF CONTENTS

PAGE

Introduction 1
Installation 4
Maintenance 4
Operation 4

Model 44A4 18671-001 Schematic 5
Model 44A4 18671-002 Schematic 6

TABLES

Table 1 RS-232 Interface Signals 2
Table 2 Acoustic Coupler Specifications 3

INSTRUCTIONS

ACOUSTIC COUPLERS - DATA COMMUNICATIONS PRODUCTS

INTRODUCTION

The use of an Acoustic Coupler enables a TermiNet* Printer to be connected to an On-Line computer or remote terminal by utilizing the telephone networks.

The Coupler converts a serial stream of data into selective tones, which are then transmitted over standard voice grade telephone lines. Conversely, the Coupler decodes selective audio tones into digital signals.

The Model 44A4 18671-001 Coupler is an originate only model, and the Model 44A4 18671-002 Coupler is an originate and answer model. Both the Model 44A4 18671-001 and the Model 44A4 18671-002 operate in either half or full duplex.

These Acoustic Couplers are used with all TermiNet* 30, TermiNet* 300 and TermiNet* 1200 Printers with rates up to 300 baud. The Couplers connect to these Printers through an RS-232 interface. Table 1 provides an explanation of the RS-232 signals. Table 2 provides a list of the Coupler specifications.

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TABLE 1

RS-232 INTERFACE SIGNALS

PIN	FUNCTION	CIRCUIT	EXPLANATION
1	Protective Ground	AA	Frame ground of data set. Ties to power system ground through the power cord.
2	Transmitted Data	BA	Data from the terminal equipment to be transmitted. A mark is negative and a space is positive. Cannot operate unless Clear to Send is on (positive).
3	Received Data	BB	Receive data for the terminal. A mark is negative and a space is positive. Held in mark condition when data set is idle or when Carrier Detect is not present.
5	Clear to Send	CB	This signal indicates to the terminal that a connection has been established with the remote data set and that transmission may begin.
6*	Data Set Ready	CC	When ON(positive), indicates that the coupler has power and is ready to operate.
7	Signal Ground	AB	Common reference for all interface connections.
8	Carrier Detect	CF	When ON (positive), indicates that a carrier is being received from the remote data set. In this set, it always occurs simultaneously with Clear to Send on Pin 5.

* Fail safe circuit. A "O" VDC will be interpreted as an "OFF" condition. A fail safe source must provide not less than 300 ohms to ground when off due to loss of power. The positive and negative voltages mentioned above are as shown below:
(Receivers) EIA -- Electronic Industry Association Standard: Positive = +3V to +25V. Negative = -3V to -25V.
(Drivers) EIA -- Electronic Industry Association Standard: Positive = +5V to +15V. Negative = -5V to -15V.

The drivers shall meet this specification while driving an essentially resistive load of not less than 3000 ohms or greater than 7000 ohms.

TABLE 2

ACOUSTIC COUPLER SPECIFICATIONS

I. OPERATING

Data Rate

Model 44A4 18671-001	0-300 Baud
Model 44A4 18671-002	0-300 Baud

Mode

Model 44A4 18671-001	Originate, Half or Full Duplex
Model 44A4 18671-002	Originate and Answer, Half or Full Duplex

Line Coupling
Acoustic

Frequencies

Model 44A4 18671-001

Send	Receive
Space - 1070 Hz	2025 Hz
Mark - 1270 Hz	2225 Hz

Model 44A4 18671-002

Send		Receive	
Mark - 1270 Hz		2225 Hz	Originate
Space - 1070 Hz		2025 Hz	Originate
Mark - 2225 Hz		1270 Hz	Answer
Space - 2025 Hz		1070 Hz	Answer

Oscillator Stablility
± 0.5% MAX.

Terminal Interface
RS-232

Receive Level and Carrier Detect
40 DBM at 2225 Hz

Transmit Power
Acoustic -15 ± 2 DBM

II. POWER REQUIREMENT

117V AC ± 10%, 50/60 Hz,
Single phase 10W

III. ENVIRONMENTAL

Operating	
Temperature	+32° F (0° C) to + 110° F (+44° C)
Humidity	10-95% - No condensation
Storage	Temperature -20° F (-30° C) to +160° F (71° C)
Transit	Unit meets national safe transit specification when packaged in original factory container.

INSTALLATION

Installation of the Model 44A4 18671-001 or 44A4 18671-002 Acoustic Coupler is as detailed below:

1. Set the Coupler on a desk or table next to a telephone or set the coupler on the Printer Pedestal shelf.
2. Connect a 44B412497-G05 cable between the Printer data set connector and the Acoustic Coupler connector. Refer to the appropriate Printer Service Manual if necessary.
3. Connect AC power to the Acoustic Coupler by plugging its power cable into a standard wall outlet.

MAINTENANCE

In the event of operational failure, and before calling a service technician, check to see that the Coupler cable is correctly attached to both the Coupler and the Printer. Also, inspect the fuse. Occasional errors in print out can be caused by noise getting into the Coupler by not having the telephone handset seated firmly in the cushions. If the telephone handset does not want to slide into the cushions easily, clean them with a dry cloth and apply a very thin coat of clear silicone to them. In-Depth maintenance (at a nominal price) is available upon return of the unit to the Repair and Return Department of the Data Communications Products Department, Waynesboro, Virginia.

CAUTION

Should it become necessary to replace the cord set on the Model 44A4 18671-002, replace it only with a cord set having the same polarity.

OPERATION

Turn on the Acoustic Coupler power switch. Set the TermiNet* Printer to the On-Line position. Place telephone handset firmly into the Coupler making sure that the cord is at the front of the Coupler.

CAUTION

Poor seating of the telephone handset in the cushions can be the cause of annoying or severe problems.

The Model 44A4 18671-001 and the Model 44A4 18671-002 Couplers have been designed to mate with most telephones. In the case of small dimensional differences in various telephones, the Coupler has been designed to permit some distortion of the cushion mounting bracket. This can be accomplished by forcing the telephone into the cushion assembly. A good test of proper fit is as follows: After the telephone handset is in cushion assembly, grasp the telephone handset and lift the Coupler slowly from the table. If the Coupler cannot be lifted in this manner, the handset fit may not be satisfactory. Both Couplers contain a phototransistor located in the receiver cushion assembly. The purpose of this phototransistor is to sense ambient room light and to disable the Coupler if the handset is not present or is not properly seated. This will prevent extraneous carrier detects from producing false data.

Data Communications Products Department General Electric Company
Waynesboro, Virginia 22980 USA

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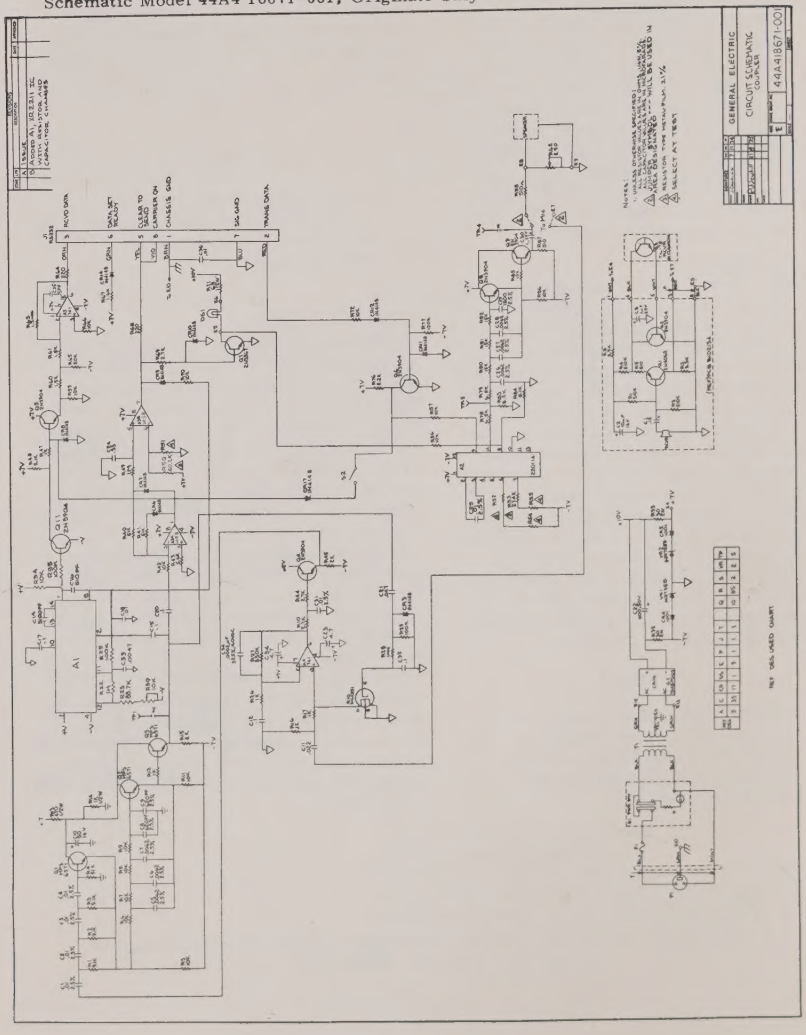
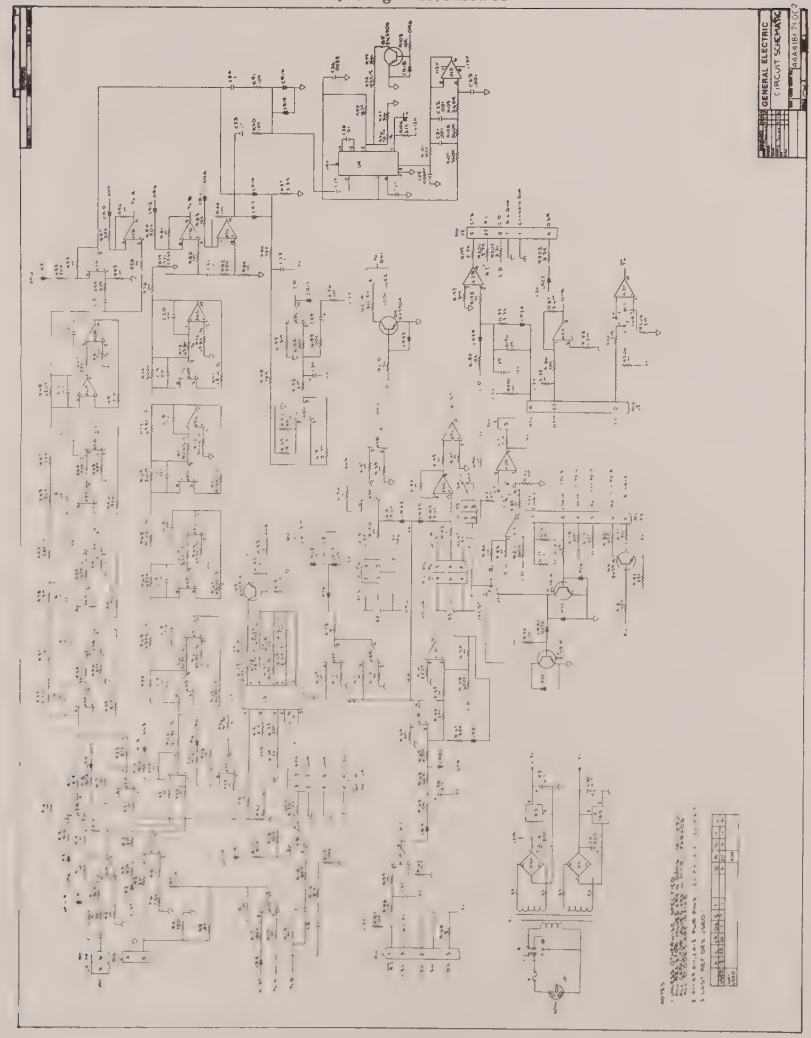
Schematic Model 44A4 18671-001, Originate Only



Schematic Model 44A4 18671-002, Originate/Answer



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